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## (54) MANUFACTURE OF MICRO-HEAT PIPE

## (57) Abstract:

**PURPOSE:** To contrive to be able to easily form a micro-heat pipe for enhancing the substantial heat conductivity of a semiconductor substrate by a method wherein a condensable fluid which is used as a working fluid is injected in recessed parts formed in the substrate with the recessed parts completely opened and the recessed parts are sealed by resistance welding without making the whole substrate heat up.

**CONSTITUTION:** Recessed parts 3 provided with a part of a fine width enough to generate a capillary pressure are formed in a semiconductor substrate 1, and welding material layers 5, through which a current is made to flow to generate heat and fuse, are each formed on the peripheries of the opening ends on the surface of the substrate 1 in these recessed parts 3. Condensable fluids which perform heat transmission as latent heat of vaporization are each put in the recessed parts in a vacuum atmosphere. Then, other semiconductor substrate, wherein welding ma-

terial layers of the same pattern as that of the welding material layers are formed, and the substrate are superposed and pressed in such a way that the welding material layers come into contact opposing to each other. By making a current flow through these welding material layers to generate heat, the substrates are instantaneously welded together by these welding material layers and, moreover, the recessed parts are sealed. In such a way, as the substrate are welded together by the welding material layers, the scattering of the condensable fluids from the recessed parts is little generated.

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